

REMARKS

Claim 1 has been amended to incorporate the subject matter of claims 5 and 7. Claims 5 and 7 have been cancelled. No new matter has been added, and entry of the Amendment is respectfully requested.

Upon entry of the Amendment, claims 1, 4, 6 and 8-11 will be pending.

Claims 1, 4-8 and 10-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamaguchi et al (US 6, 472, 019 B1) in view of Di Giaimo (US 3, 496, 134).

Claim 9 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Yamaguchi et al in view of Di Giaimo and further in view of Snyder (US 3,617,188).

The above two rejections should be withdrawn because Yamaguchi et al, Di Giaimo and Snyder do not disclose or render obvious the present invention, either alone or in combination.

Moreover, the test data presented in the §1.132 Declaration of Enomoto submitted on October 31, 2008, demonstrates that the claimed combination of an epoxy compound and at least one weakly basic compound as an HCl trapping compound provides unexpectedly superior properties over the cited prior art.

Namely, the combination of the epoxy compound (such as epoxidized soybean oil and epoxidized linseed oil) and the weakly basic compound (such as sodium hydrogen carbonate and sodium carbonate) provides good mechanical stability or chemical stability, and good water- and oil-repellency. Without the epoxy compound and the weakly basic compound, or with only one of the epoxy compound and the weakly basic compound, good mechanical stability or chemical stability and good water- and oil-repellency cannot be obtained. The aqueous water- and oil-repellent dispersion of the present invention has excellent properties.

In the Advisory Action dated March 31, 2009, the Examiner maintained her position that Inventive Example 8 does not show superior results over Comparative Examples 4, 5 and 6. Further, the Examiner was of the view that the test data is not commensurate in scope with the invention as claimed. Applicants respond as follows.

1. Unexpected Results:

As noted above, the Examiner maintained her position that Inventive Example 8 does not show superior results over Comparative Examples 4, 5 and 6. Particularly, the Examiner directed her comments to those dispersions containing the same chloride containing monomer in similar amounts in both the Inventive and Comparative Examples, and presented data taken from the Declaration said to meet these criteria in the following Table:

Component	IE 1	IE 2	IE 5	IE 6	IE 8	CE 4	CE 5	CE 6	CE 7
FA	150 g	150 g	150 g	150 g	150 g	150 g	150 g	150 g	150 g
Vinyl chloride	40 g	40 g	40 g	40 g	40 g	40 g	40 g	40 g	40 g
Non-ionic emulsifier	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Epoxidized soybean oil	10 g	10 g	10 g	10 g	10 g	10 g	10 g	10.7 g	0 g
Sodium hydrogen carbonate / Sodium Carbonate	0.7 g	0.7 g	1.5 g	0.7 g	0.9 g	0.7 g	0.7 g	0 g	10.7 g
H ₂ O repellency (Initial)	5	5	5	5	4	5	5	5	4
Oil repellency (Initial)	5	4	4	4	3	5	5	5	3
H ₂ O repellency (1 month at 50°C)	5	5	5	5	4	4	4	4	4
Oil repellency (1 month at 50°C)	4	4	4	4	3	3	3	3	3
Storage stability	Good	Good	Good	Good	Good	Good	Good	Good	Good
Mechanical stability	Good	Good	Good	Good	Fair	Fair	Fair	Fair	Good
Chemical Stability	Good	Good	Good	Good	Fair	Fair	Fair	Fair	Poor
Yellowing	Good	Good	Good	Good	Good	Good	Good	Good	Good

The Examiner pointed out that Comparative Examples 4-6 exhibited similar storage stability, chemical stability, yellowing, water and oil repellency after one month at 50°C; better initial oil and water repellency; while exhibiting only a slightly poor mechanical stability. Thus, the Examiner asserts, it is clear from the data submitted that Comparative Examples 4-6 exhibit

superior properties on more counts than at least the Inventive Example 8. The Examiner then concluded that Applicants' position that use of a combination of epoxy compound and at least one weakly basic compound provides superior properties is without merit.

Applicants respectfully disagree.

As an initial matter, the Table prepared by the Examiner as shown above has a serious error. Specifically, the Examiner mistakenly asserted that the Mechanical stability for comparative example CE7 is "Good", which in fact should be "Poor" as reported in Mr. Enomoto's Declaration.

In this regard, the properties after the passage of time are technically important. That is, mechanical stability, chemical stability, H₂O repellency and oil repellency after 1 month at 50°C are important parameters.

The Table prepared by the Examiner demonstrates that the Examples according to the present invention (IE1, IE2, IE5, IE6 and IE8) have much better mechanical stability and chemical stability than the Comparative Examples outside the scope of the present invention (CE4, CE5, CE6 and CE7). In addition, IE1, IE2, IE5 and IE6 exhibited much better H₂O repellency and oil repellency after 1 month at 50°C than CE4, CE5, CE6 and CE7.

2. The Test Data is Commensurate in Scope with the Claimed Invention:

The Examiner was of the view that the test data is not commensurate in scope with the invention as claimed. In this regard, the Examiner notes that, while examples showing supposedly superior properties are presented only for one chlorine-containing polymerizable compound, one polymerizable compound having a perfluoroalkyl or perfluoroalkenyl group and one methacrylate group containing monomer in both Inventive and Comparative Examples, the

present claims broadly cover perfluoroalkyl or perfluoroalkenyl group containing monomer, chlorine-containing monomer and methacrylate group containing monomer.

Regarding this last point, the Examiner considers that the monomers used in the invention do play a key role, because the combination of the epoxy compound and weakly basic compound traps HCl from the chlorine containing monomer.

Applicants respectfully disagree. Namely, Inventive Examples 1-10 and the test results as set forth in Table 1 at page 9 of Mr. Enomoto's Declaration are representative of the scope of present claim 1.

Claim 1 has been amended to recite that the chlorine-containing polymerizable compound (I-2) is at least one selected from the group consisting of vinyl chloride, vinylidene chloride, alpha-chloroacrylate and 3-chloro-2-hydroxypropyl methacrylate and that the at least one weakly basic compound is a metal salt of an acid.

The Examples of the present specification and Mr. Enomoto's Declaration employ the following compounds as the chlorine-containing polymerizable compound (I-2):

Vinyl chloride (Examples 1, 2, 5, 6 and 8)
Vinylidene chloride (Examples 3 and 7)
Stearyl α -chloroacrylate (Example 4)
 $C_4F_9CH_2CH_2OCOCCH=CH_2$ (Example 9)
 $C_2F_5CH_2CH_2OCOCCH=CH_2$ (Example 10).

For the polymerizable compound (I-1) having a perfluoroalkyl or perfluoroalkenyl group and an acrylate group, methacrylate group or alpha-substituted acrylate group, the Examples of the present specification and Mr. Enomoto's Declaration employ the following compounds:

$C_nF_{2n+1}CH_2CH_2OCOCH=CH_2$
(a mixture of compounds wherein n is 6, 8, 10, 12 and 14 (average of n: 8)) (FA)
(Example 1)
 $C_4F_9CH_2CH_2OCOCH=CH_2$ (Example 8)
 $C_4F_9CH_2CH_2OCOCCH=CH_2$ (Example 9)

$\text{C}_2\text{F}_5\text{CH}_2\text{CH}_2\text{OCOCCH}=\text{CH}_2$ (Example 10).

For the optionally present another copolymerizable compound (I-3), the Examples of the present specification and Mr. Enomoto's Declaration employ the following compounds:

Stearyl acrylate (Example 1)
N-methylolacrylamide (Example 1).

For the weakly basic compound which is a metal salt of an acid, the Examples of the present specification and Mr. Enomoto's Declaration employ the following compounds:

Sodium hydrogen carbonate
Sodium carbonate

That is, the Inventive Examples employ chlorine-containing polymerizable compounds (I-2) recited in amended claim 1 and various polymerizable compound (I-1). Since the another copolymerizable compound (I-3) is optional, two compounds are sufficient. Further, variation of the monomers (I-1), (I-2) and (I-3) is sufficient, because a key feature of the claimed subject matter does not reside in the monomers (I-1), (I-2) and (I-3). The key feature of the claimed subject matter resides in the combination of (a) the epoxidized vegetable and/or the epoxidized fatty acid ester with (b) the weakly basic compound.

Importantly, the Examples in the specification and Mr. Enomoto's Declaration are fully representative of the chlorine-containing polymerizable compound and the weakly basic compound as limited in amended claim 1.

For the above reasons, it is respectfully submitted that (1) the Rule 132 Declaration by Mr. Enomoto submitted on October 31, 2008 demonstrates that the use of a combination of epoxy compound and at least one weakly basic compound as an HCl trapping compound provides unexpectedly superior properties; and (2) the Inventive Examples 1-10 and the test

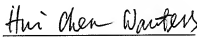
results as set forth in Table 1 at page 9 of the Declaration are representative of the scope of the amended claims.

Accordingly, the present invention is not obvious over Yamaguchi et al, Di Giaimo, and Snyder, either alone or in combination. Withdrawal of the foregoing § 103(a) rejections is respectfully requested.

Allowance of claims 1, 4, 6 and 8-11 is respectfully requested. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Hui C. Wauters
Registration No. 57,426

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE

23373

CUSTOMER NUMBER

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